

Choi, Peter H.

From: DeMille, Ginger R. (ASRC)
Sent: Tuesday, November 01, 2005 11:00 AM
To: Choi, Peter H.
Cc: Diaz, Susanna
Subject: 10/007612 - I haven't forgotten you Peter. I'm working on this today. Hope it's not too late. Thank you!

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22/7/5

DIALOG(R)File 63:Transport Res(TRIS)
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00387707 DA

TITLE: COST SAVINGS POTENTIAL FROM IMPROVEMENT IN RAILCAR RELIABILITY AND MAINTAINABILITY

AUTHOR(S): Muotoh, DU; Elms, CP

CORPORATE SOURCE: Lea (ND) and Associates, Incorporated, Dulles

International Airport, P.O. Box 17030, Washington, DC, 20041,

REPORT NUMBER: UMTA-IT-06-0273-84-1Tech Rpt.

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SUPPLEMENTAL NOTES: Task 6.

PUBLICATION DATE: 19840400 **PUBLICATION YEAR:** 1984

LANGUAGE: English **SUBFILE:** UMTRIS (U 8402)

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AVAILABILITY: Urban Mass Transportation Administration; 400 7th Street, SW

; Washington; DC ; 20590

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CONTRACT/GRANT NUMBER: TUM60-82-C71122

FIGURES: 12 Fig. **TABLES:** 10 Tab.

ABSTRACT: Potential benefits from proposed improvement in transit equipment performance must be quantifiable so that transit managers and other decision-makers can justify expenditures incurred on such improvement programs. This report presents a mathematical tool that will permit the estimation of cost savings potential from improvements in railcar reliability and maintainability. Rail transit improvements are expressed in terms of two major performance indicators--Mean Time Between Failures and Mean Time To Restore a Car to Service Condition. The tool is designed to estimate potential benefits (in dollars) achievable through improvements. It does not address the costs incurred or the actual mechanism for realizing these improvements. Various models for estimating operating, maintenance, and fleet cost savings have been developed. These are then calibrated using data from the Washington Metropolitan Area Transit Authority. Also presented are example application of the models in either areas including cost savings from subsystem improvements and life cycle cost comparisons for making decisions to rebuild or buy new cars. While the models have been developed on the basis of performance related to unscheduled maintenance, they can be extended to include scheduled maintenance. It is cautioned that the results from the calibrated models should not be extrapolated to other transit authorities without a close examination for conformity. Although the models have been developed for rail transit, they can be adapted for use in the bus industry, for automated small vehicle systems, or for other types of transit systems.

SUBJECT HEADING: U13,RAIL VEHICLE TECHNOLOGY

22/7/3

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00479322 DA

TITLE: USE OF LIFE-CYCLE COST ANALYSIS IN TRANSIT CAPITAL OVERHAUL/REPLACE DECISIONS--AN APPLICATION TO THE PATH RAILCAR FLEET

AUTHOR(S): Schaevitz, R

CORPORATE SOURCE: Transportation Research Board, 2101 Constitution Avenue, NW, Washington, DC, 20418,

JOURNAL: Transportation Research Record Issue Number: 1165 **Pag:** pp 11-18

SUPPLEMENTAL NOTES: This paper appears in Transportation Research Record No. 1165, Transit Management and Replacement Capital Planning.

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AVAILABILITY: Transportation Research Board Business Office; 2101 Constitution Avenue, NW ; Washington; DC ; 20418

TABLES: 8 Tab.

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ABSTRACT: As fleets of rail cars age and become increasingly costly to maintain, two options are available to transit properties: conduct a major overhaul or replace with new cars. In a 1984 study for the Port Authority (of New York and New Jersey) Trans-Hudson Corporation (PATH), an in-depth engineering evaluation and life-cycle cost analysis was conducted for a portion of the PATH fleet. Ten- and twenty-year overhaul programs for existing cars were compared with a new car purchase in a life-cycle cost framework. The results of the analysis

11/10/2005

showed the new car purchase option to be most cost-effective under most combinations of assumptions on future conditions. PATH subsequently made a decision to buy new cars, and these are now in operation. Described in more detail in this paper is the analysis conducted for PATH, including cost estimate procedures, inflation and discount rate assumptions, and methods for estimating residual value. The results of extensive sensitivity testing are discussed, including the issue of what can and cannot be generalized to other studies. Use of life-cycle cost analysis was found to be effective and useful in this application and was seriously considered by PATH and Port Authority management in their decision making. Applications to other systems should be encouraged. These will be enhanced through further research and development of methodologies for estimating operating and maintenance costs.

SUBJECT HEADING: H11,ADMINISTRATION; U22,TRANSIT MAINTENANCE MANAGEMENT
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